

DATE REVISED: 07-12-89

OBJECTIVE: Develop a procedure for reservoir characterization, assigning geologically significant values to computer-based reservoir simulators. The general model is based on permeability measurements and a heterogeneity classification based on an outcrop of eolian Page sandstone.

CONTRACT NO.: DE-AC19-85BC10849
 CONTRACT AMT: 624000
 B AND R CODE: AC1510100
 PADS CNTRL NO:

CONTRACTOR:
 University of Texas at Austin
 ADDRESS: P.O. Box 7726
 Austin, TX 78713

CONTRACT PERFORMANCE PERIOD:
 10-01-85 TO 09-30-88
 PROJECT BEGINNING: 10/85

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PROJECT SITE:
 Austin, TX 78713

SCHEDULE MILESTONES:

Complete final project.	10/88
Complete computer code and appropriate programs.	10/88
Complete final Topical report.	05/89
Complete report on procedure validation that incorporates and integrates the results of all previous projects.	05/89

CONTR.	FUNDING (1000'S)	DOE	OTHER	CONTRACTOR	TOTAL
FUNDING					
PRIOR FISCAL YRS	624				624
FISCAL YR 1989	0				0
FUTURE FUNDS	0				0
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TOTAL EST'D FUNDS	624	0	0	0	624

PROJECT DESCPTN: Reservoir characterization work continues with eight projects involved over a three year effort to examine, measure and quantify properties of the reservoir and to determine appropriate mathematical techniques for predicting or estimating interwell properties. After modeling has made use of reservoir data interpretations and established mathematical methods, the validation of procedures will occur resulting in improved simulators to compare production predictions with actual case histories and be able to define reservoir heterogeneities.

PRESENT STATUS: Project performance period expired. Final report received 5/89.

ACCOMPLISHMENTS: Field trip to Page, Arizona, in January of 1986. Analysis of minipermeameter measurements from previous field trip. Completion of geological study and mapping of Page outcrop. Development of theoretical framework for transforming non-normally distributed data sets. Development of a theory for describing dispersivity based on the statistical properties of the permeability. Complete identification and selection of preferred geostatistical methods. Completed geologic mapping and cross-section diagramming of 3-D outcrop with representation of internal structure. Completed statistical trends in mapped geologic features established thru correlation with physical properties.

BACKGROUND: Previous contract work at UTA (1982-85) had objectives to: 1) develop a general reservoir descriptor (GRD) for assigning input properties to numerical reservoir simulations, 2) structure a reservoir data base to accept the GRD procedures, and 3) test GRD and data base on field projects. Objective 2 resulted in a final report "An Integrated Oil and Reservoir Database System for Geological and Petroleum Engineering", DOE/BC/10744-7 published in December 1984. Database to cover areas in exploration, drilling, production, scout tickets and well logs was detailed. Objectives 1 and 3 were met with a final report "Reservoir Characterization for Numerical Simulation" now in review. Report describes study of eolian outcrop performed to determine extent reservoir qualities could be characterized.